

CLAIMS

1. An internal combustion engine for a vehicle comprising:
an engine block having a piston movable within a cylinder bore,
the piston having a piston skirt and a dome;
a connecting rod operatively connecting the piston to a crankshaft;
5 and
a squirter connected to the engine block and having a nozzle aimed
to spray lubricant against a wall of the cylinder bore slightly below the piston
skirt when the piston is at top dead center.
2. The internal combustion engine of claim 1, wherein said nozzle
is aimed to spray a continuous stream of the lubricant across the cylinder bore.
3. The internal combustion engine of claim 1, wherein said
cylinder bore has a major side and a minor side, and said nozzle is aimed to
spray the lubricant on the minor side.
4. The internal combustion engine of claim 1, wherein said nozzle
is aimed to spray the lubricant between approximately 3 and 8 millimeters
below the piston skirt when the piston is at top dead center.
5. The internal combustion engine of claim 1, wherein said piston
is connected to the connecting rod by a wrist pin, and wherein said nozzle is
aimed to spray on the wrist pin in the middle portion of each piston stroke.
6. The internal combustion engine of claim 1, wherein said nozzle
is aimed to spray the lubricant on an underside of the dome when the piston is
at bottom dead center.

7. The internal combustion engine of claim 1, wherein said squirter includes a spring-loaded ball valve to assure that at least a minimum lubricant pressure is available prior to squirting the lubricant.

8. The internal combustion engine of claim 1, wherein the internal combustion engine comprises only one squirter at each said cylinder bore.

9. An internal combustion engine for a vehicle comprising:
 an engine block having a piston movable within a cylinder bore between top dead center and bottom dead center positions, the piston having a piston skirt and a dome;
 5 a connecting rod operatively connecting the piston to a crankshaft, wherein said piston is connected to the connecting rod by a wrist pin; and
 a squirter connected to the engine block and having a nozzle aimed to spray a steady stream of lubricant at an angle across the cylinder bore to spray the lubricant against a wall of the cylinder bore slightly below the piston
 10 skirt when the piston is at the top dead center position, to spray the lubricant on the wrist pin when the piston is between the top dead center and bottom dead center positions, and to spray the lubricant on an underside of the dome when the piston is at the bottom dead center position.

10. The internal combustion engine of claim 9, wherein said cylinder bore has a major side and a minor side, and said nozzle is aimed to spray the lubricant on the minor side.

11. The internal combustion engine of claim 9, wherein said nozzle is aimed to spray the lubricant between approximately 3 and 8 millimeters below the piston skirt when the piston is at top dead center.

12. The internal combustion engine of claim 9, wherein said squirter includes a spring-loaded ball valve to assure that at least a minimum lubricant pressure is available prior to squirting the lubricant.

13. The internal combustion engine of claim 9, wherein the internal combustion engine comprises only one squirter at each said cylinder bore.

14. A method of lubricating a piston reciprocating between top dead center and bottom dead center positions within a cylinder bore of an engine block, wherein the piston has a dome and a skirt, the method comprising:

5 spraying lubricant across the cylinder bore against a wall of the cylinder bore slightly below the skirt of the piston when the piston is at the top dead center position;

 spraying lubricant onto a wrist pin connecting the piston with a connecting rod when the piston is between the top dead center and bottom
10 dead center positions; and

 spraying lubricant onto an underside of the dome when the piston is at the bottom dead center position.

15. The method of claim 14, wherein said spraying steps are performed by spraying a continuous stream of lubricant.

16. The method of claim 15, wherein said continuous stream of lubricant is sprayed from only a single squirter connected to the engine block for each said cylinder bore.

17. The method of claim 14, wherein the cylinder bore has a major side and a minor side, and said spraying is performed by a squirter having a nozzle aimed to spray the lubricant across the cylinder bore toward the minor side.

18. The method of claim 14, wherein said lubricant is sprayed between approximately 3 and 8 millimeters below the piston skirt when the piston is at top dead center.

19. The method of claim 14, further comprising, prior to spraying, assuring that at least a minimum lubricant pressure is available in the engine by the use of a spring loaded ball valve.